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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/756,902	01/14/2004	Siong Hong Koh	59342US002	3101
32692	7590	10/03/2005	EXAMINER	
3M INNOVATIVE PROPERTIES COMPANY PO BOX 33427 ST. PAUL, MN 55133-3427			WILSON, LEE D	
			ART UNIT	PAPER NUMBER
			3723	

DATE MAILED: 10/03/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

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<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/756,902	KOH ET AL.	
	<b>Examiner</b>	<b>Art Unit</b>	
	LEE D. WILSON	3723	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-13 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-13 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>7/27/04 and 4/1/05</u> . | 6) <input type="checkbox"/> Other: ____.  |

**DETAILED ACTION**

***Claim Rejections - 35 USC § 112***

1. Claims 1-13 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

a. The following claim has phrases which render the claim vague, indefinite, awkwardly and confusingly worded:

- i. "acceptable surface" in claim 1, line 10. What does an acceptable surface mean. This would vary from the view point of the user depending upon the intended use. The specific state or result desire and/or condition should be state so that all will know what is acceptable and what is not.
- ii. "acceptable apertures" in claim 1, line 11. What does an acceptable aperture mean. This would vary from the view point of the user depending upon the intended use. The specific state or result desire and/or condition should be state so that all will know what is acceptable and what is not.

***Claim Rejections - 35 USC § 103***

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-9 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Barber Jr (6179887) in view of Barber jr et al (5616411).

a. Barber jr discloses the claimed invention except for a shore D hardness range of 55-90 and plurality of bristles lengths ranging from .0625 inch to 1.5 inch. In regard to claim 9, it is taught by figure 7.

b. Barber jr et al teaches a method of using a brush to clean a circuit board having thermoplastic polymer or tpe's with a shore D hardness ranging from 30 to 90 (col.12, lines 40-50) which allows for various bristle hardness and Barber Jr teaches a length except for a range of .0625 inch to 1.5 inch. It would have been obvious to one having ordinary skill in the art at the time the invention was made to used a range from .0625 inch to 1.5 inch, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. *In re Aller*, 105 USPQ 233.

c. It would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the Barber jr device by providing the thermoplastic polymers that have a shore D hardness ranging from 30 to 90 and a length ranging from .625 inch to 1.5 inch as taught by Barber jr and In re Aller, 105 USPq 233 which allows for the known ranges and lengths to be change to fit a specific intended use with the method and use of the device being disclosed.

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3. Claims 10-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Barber Jr (6179887) as applied to claims 1-9 and 12 above, and further in view of Johnson et al (6261156).

d. Barber jr is discussed above.

e. Barber jr does not disclose steps of refining surfaces to provide a finish of .05 to .3 mcirometer Ra.

f. Johnson et al teach method having brush to refine surfaces to provide a finish of .05 to .3 mcirometer Ra (Tables 2-7) which would provide various surface finishes.

g. It would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the modified Barber jr device by providing steps of refining surfaces to provide a finish of .05 to .3 mcirometer Ra as taught by Johnson et al which would provide various surface finishes.

#### ***Allowable Subject Matter***

4. Claim 13 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

#### ***Conclusion***

5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Koh et al and Turch et al disclose a device.


Any inquiry concerning this communication or earlier communications from the examiner should be directed to LEE D. WILSON whose telephone number is 571-272-4499. The examiner can normally be reached on M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, JOSEPH HAIL can be reached on 571-272-4485. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Ldw

September 29, 2005



**LEE D. WILSON**  
**PRIMARY EXAMINER**